

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

After entry of the foregoing amendments, Claims 1-18, 20, and 21 are pending in the present application; and Claims 3 and 9-21 are withdrawn from consideration without prejudice or disclaimer. Claims 1-5, 7, 8, and 11 are amended without introduction of new matter; Claim 19 is canceled by the present amendment without prejudice or disclaimer.

In the outstanding Office Action, Claims 1, 4, and 7 were rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 6,570,687 B2 to Araki et al. (hereinafter "Araki") in view of U.S. Patent No. 5,729,548 to Holender; Claims 2 and 5 were rejected under 35 U.S.C. 103(a) as unpatentable over Araki and Holender in view of U.S. Patent No. 6,473,214 B1 to Roberts et al. (hereinafter "Roberts"); and Claims 6 and 8 were rejected under 35 U.S.C. 103(a) as unpatentable over Araki and Holender in view of U.S. Patent No. 6,160,656 to Mossberg et al. (hereinafter "Mossberg").

Turning now to the rejection of Claims 1, 4, and 7 under 35 U.S.C. 103(a) as unpatentable over Araki in view of Holender, that rejection is respectfully traversed.

Amended Claim 1 recites, *inter alia*: "optically encoding destination address information attached to an optical IP packet into a time series optical bipolar code using light attributes;" and "discriminating the optical IP packet by estimating peak values of optical time correlations of the encoded destination address information of the attached to the received optical IP packet by optical correlation processing with encoded addresses." The remaining elected claims depend from Claim 1.

Applicants' specification provides a non-limiting example of the claimed encoding with respect to Figures 4 and 5. In the optical encoder 2D of Figure 4, an optical pulse is split

into a plurality of chips. As shown in Figure 5, the chips are imparted with phase-shifts to encode a destination address into a time series optical bipolar code.

Applicants' specification provides a non-limiting example of the claimed discriminating with respect to Figures 6, 7(a), and 7(b). In the address processing section 6 of Figure 6, the optical decoders 61a-c are configured to read the encoded destination address in an optical manner. In this example, if a decoder corresponds to the encoded destination address, the corresponding decoder outputs a waveform having a higher peak, as shown in Figure 7(a), and the non-corresponding decoders output waveforms having lower peaks, as shown in Figure 7(b).

The outstanding Office Action does not address the newly added limitations of the claimed encoding and discriminating. Applicants submit that neither Araki nor Holender teaches those limitations.

Araki's optical signal is converted into an electrical signal before address processing.<sup>1</sup> Thus, as the address processing speed is limited by the corresponding electrical circuitry, the claimed optical address processing imparts clear advantages over Araki's teachings.

Holender digitally encodes an entire packet, determines the destination address port via the address portion of the digital data sequence, and generates a two-dimensional optical pattern corresponding to the destination address port.<sup>2</sup> The two-dimensional code does not contain a time axis corresponding to the address of a receiver. Further, Holender discloses that the rotation of different patterns can result in identical patterns, i.e., result in decoding errors.<sup>3</sup> The claimed invention employs optical time-correlations between the received optical IP packet and the encoded address, thereby preventing such errors caused by a rotation of the transmission path.

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<sup>1</sup> Araki, col. 2, lines 26-50.

<sup>2</sup> Holender, col. 2, lines 27-36.

<sup>3</sup> Holender, col. 14, lines 50-60.

For at least the above-stated reasons, independent Claims 1 and 12 are believed to patentably define over Araki and Holender. Accordingly, Applicants respectfully request that the rejection of Claims 1, 4, and 7 under 35 U.S.C. 103(a) as unpatentable over Araki in view of Holender be withdrawn. Applicants submit that neither Roberts nor Mossberg cures the above-noted deficiencies of Araki and Holender.

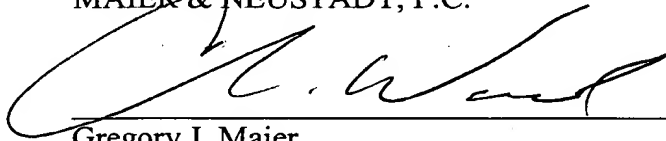
Applicants note that Claim 4 recites: sending the optical IP packet labeled with address information onto a number of arms equal to the number of address entries; and simultaneously conducting optical correlation processing on all arms in parallel. As stated above, Araki converts an optical signal into an electrical signal before address processing. Holender takes optical correlations in a two-dimensional code. As a result, unlike the claimed invention, Holender cannot use a single transmission path to distribute signals to respective destinations. Accordingly, Claim 4 is believed to further patentably define over Araki and Holender.

Applicants also note that Claim 7 recites: dividing an optical IP packet having encoded address information in two; conducting optical correlation processing to discriminate address information from an optical code in one optical IP packet containing address information between the two divided optical IP packets; and selecting an output path based on a result of the discrimination. Thus, the invention of Claim 7 selects an output path based on optical correlation processing with respect to a time axis. Again, Araki converts an optical signal into an electrical signal before address processing. Holender takes optical correlations in a two-dimensional code that does not contain a time axis. Accordingly, Claim 7 is believed to further patentably define over Araki and Holender.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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